241 IT WILL be seen that structure and climate conspire together
132 to encourage a scheme of summer utilisation of high pastures
221 combined with valley cultivation that was much enriched when the maize plant was introduced, but this was not so long ago, and the older régime was none too prosperous both because of climatic troubles in the highlands and especially the sensitiveness of the wheat plant to abnormal seasons, and because of the hindrances to organisation arising from the diversities of language between governments and
37/ subjects. The encouragement of industry was not easy while some lignite and a little coal were the main sources of power, but later on it became possible to use abundant petroleum and natural gas and we have yet to see, in the
565 next generation, what influence they may have. Up to the
241 present, however, a true peasantry survives, and has increased its hold on the soil; it still makes at home a great proportion of what it needs, it still finds that in the hills the maize crop may not ripen, and old communal schemes relating to the high pastures remain important.

CHAPTER III

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3. Coke Imports and Production

	Imports	*Production**
	in '000 tons	
1936	39	78
1937	49	78
1938	63	86
1939	55	88
1940	54	86
1941	n.a.	90

* Including gas coke.

Of the total coke available annually—140,000 tons—100,000 tons were consumed by blast-furnaces and iron-works, the remaining 40,000 by other industries.

II. ELECTRIC POWER

A. General

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Being an agricultural country, Rumania, like the other countries of South Eastern Europe, is not extensively developed from the electrical point of view. The most important high-tension transmission lines are located in the neighbourhood of the Prahova oilfields and of Bucarest, but though these two areas are interconnected by means of lines operating at 120 and 60 kV, there is no national grid. There are a few other high or medium-tension lines which mostly connect power stations owned by industrial concerns. The majority of generating stations giving a public supply are quite isolated from each other.

1. Sources of Power

Rumania's potential water-power resources are high. It is estimated that 24,000 million kWh could be obtained annually from the economically

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exploitable water-courses, necessitating the installation of 5,500,000 kW of plant. The water-power developed so far however, amounts to about 50,000 kW. This failure to exploit the available water power is mainly attributable to the abundance of native fuel oil and low-grade coal, and to the high initial capital costs which hydro-electric development entails. In 1938, therefore, about 63 per cent. of the plant installed in Rumanian public-supply stations was of a thermal type, 25 per cent. was Diesel and only 12 per cent. hydro-electric. By 1940 the percentages were 66 : 17 : 17. The table below gives figures of total capacity and output of both public and industrial stations in recent years.

2. Present Output and Utilisation

It is estimated that in 1942 output did not exceed 1,130 million kWh from a total-installed capacity of about 906,000 kW. (These totals include capacity and output of those stations in Bessarabia and N. Bucovina which were regained in 1941.)

The following table shows the probable consumption of electric power in 1942 by the various consumer groups:

	Millions of kWh Consumed	*% of Total Output*
Industrial	701·0	70·0
Household uses and private lighting ..	124·3	11·0
Public lighting ..	17·0	1·5
Agriculture	5·6	0·5
Transmission losses ..	192·1	17·0
	1,130·0	100·0

377 The above list contains only the most important industrial stations, most of which also supply public requirements in their areas.

C. TRANSMISSION SYSTEM

1. Bucarest Area

Doiresti hydro-electric station is connected with Bucarest by a 120-kV line 70 miles long. The line passes through Doiresti, north of Târgoviste, and thence to Bucarest via Chitilla. At Doiesti some power is stepped down to 60 kV and is transmitted to Bucarest via Ploesti.

Schitu Golesti thermal station, also 70 miles north of Bucarest, is connected with Doiresti by a 60-kV line.

2. Prahova Area

The Concordia Petroleum Company owns an extensive distribution network. Its power stations supply not only the installations on the Prahova oilfields, but also the communities of Brasov, Busteni, Sinaia, Câmpina, Ploesti and other centres. The Gura Ocnitei station of this company is connected to Floresti station (owned by Steaua Electrică S.A.R.), by 60-kV lines, which also interconnect with the Doiesti transformer station of the Bucarest system. Other lines operated at 60 kV run between Floresti and Ploesti, and between Floresti and Bucarest. Floresti is linked with the Câmpina and Sinaia stations of the Concordia Company by 25-kV lines, which pass northwards to Brasov.

3. Sibiu Area

The industrial generating station Dicio San Martin is the chief source of electric current. It is linked with Sibiu by a 60-kV line, and with the other small stations in this and the surrounding areas by lines at lower voltages.

D. FUTURE DEVELOPMENTS

377 An official decree published in August, 1942, 371 ordered the electrification of the Rumanian State Railways, and at that same time the economies which would result from the development

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ment for this purpose of hydro-electric power in place of the coal, which is at present used, were pointed out. A scheme providing for the construction both of hydro-electric stations and of thermal reserve stations for this purpose has been prepared, and includes initially the carrying out of the "Bicaz" project on the River Bistrița, near Tarcău. At this place a dam is to be built to form a regulating reservoir, the water from which will serve to irrigate areas at present uncultivated. In a normal year, a total output of 400-600 million kWh. is expected. Apart from supplying the requirements of the railways, power will be used in the exploitation of local raw materials and to facilitate the development of the following industries:

Wood pulp.
Artificial silk.
Electro-chemistry.
Electro-metallurgy.

Work on the Bicaz dam is to begin in the near future. The first sections of railway track to be electrified are:—

Bucarest-Ploești (59 km.—37 miles).

Ploești-Brașov (111 km.—69 miles, of which Ploești-Brașov is double-track).

Brașov-Sighișoara (129 km.—80 miles).

Up till the beginning of 1943, however, none of these projects appeared to have been begun.

The Rumanian Government is also reconsidering the much-discussed plan for the exploitation of the Danube Rapids at the Iron Gates, where the river enters Rumanian territory. If the work is carried out it will be supervised by a Rumanian-Bulgarian-German concern. The eventual output from this site should reach 3,000 million kWh. per annum, requiring an installed capacity of about 6-700,000 kW. (The largest station yet built in Europe is that on the Dnieper, having an installed capacity of 560,000 kW.) The output from the proposed station will supply the needs of South Rumania (including the railways), North Bulgaria and perhaps also East Serbia.

The important oil-field station of Grozăvești in Bucarest has been adapted to use natural gas, and is believed to have been extended.

[19c]